

U.S.S.N. 10/805,712

- 10 -

GKNG 1189 PUS

**REMARKS**

Claims 13-24 are pending in the above application. Claims 16, 20, and 23 have been withdrawn because they are directed toward a non-elected invention. Claims 13-15, 17-19, 21, 22, and 24 stand rejected under 35 U.S.C. §112, second paragraph for indefiniteness. Claims 13, 14, 17, 19 and 22 stand rejected under 35 U.S.C. §103 as being unpatentable over Krude, U.S. Patent No. 5,451,185 in view of Miller, U.S. Patent No. 2,875,600 and Jacob, U.S. Patent No. 5,242,329. Claims 15, 18, 21 and 24 are noted as containing allowable subject matter if rewritten to overcome the §112 rejections and to include all of the limitations of their base claim and any intervening claims.

With regard to the specification objections set forth in paragraph 3 of the Office Action, the Applicant has amended the abstract of the disclosure to correct the typographical errors noted in the Office Action.

Similarly, with regard to the specification objections set forth in paragraphs 4(a)-4(e) of the Office Action, Applicant has amended the specification as suggested to correct the typographical errors noted therein. Further, with regard to paragraph 4(f) in the Office Action, the Applicant has amended paragraph [0042] of the specification to clarify what is shown in Figure 12. Specifically, Applicant has merely substituted the language in the Brief Description of the Drawing section of the specification for Figure 12 as the lead sentence of paragraph [0042]. Applicant submits that one of skill in the art would readily understand what is shown and described in Figure 12. The principle of the various embodiments is shown in Figure 12, without the ball cage for the sake of simplicity.

With regard to the specification objections set forth in paragraph 5(a) of the Office Action regarding the language "an angle bisecting plane," the Applicant submits that the phrase "angle bisecting plane" is well known and readily understood by one of skill in the art. One of skill in the art understands that, in order to have a constant velocity joint, all points of contact between the elements of force transfer have to be in the "angle bisecting plane" to ensure that the joint meets the constant velocity condition. This term is commonly used in the constant velocity joint art and can be readily

U.S.S.N. 10/805,712

- 11 -

GKNG 1189 PUS

identified as well as understood by one of skill in the art. See, for example, U.S. Patent Nos. 6,319,133 and 6,071,195 which both reference the angle bisecting plane of a joint within the claims. Further, this same language is used in the allowed claims of the parent application. For these reasons, the objections should be withdrawn.

Paragraph 5(b) of the Office Action objects to the language at lines 23 and 24 of both claims 13 and 19 as lacking a proper antecedent basis in the detailed description. The reference to "radial play" in lines 23 and 24 of claims 13 and 19 has been deleted (claim 13) or modified (claim 19) by the foregoing amendments. The clarifying language of claim 19 can be found in the specification at amended paragraph [0041]. Further, the description and the claim language is supported by the figures. No new matter has been added.

With regard to the specification objections set forth in paragraph 5(b) regarding lines 14-21 of both claims 13 and 19, this language is also described in the specification and would be readily understood by one of skill in the art. This claim language refers to the control angles ( $\beta_1$ ) and ( $\beta_2$ ). The control angles are described in detail at paragraph [0042] of the specification. Therein all of the limitations set forth in lines 14-21 of claims 13 and 19 are supported. Further, the control angles are identified in Figure 12, and the language of paragraph [0042] supports the language in the claims that the control angles open in an axial direction, that the control angles are defined as angles between tangents and ball contact points in the track pairs, and that changes in the first control angle and the second control angle occur in opposite senses when relative axial displacement occurs within the joint. Finally, claim 22 has been cancelled and thus, the rejections set forth in paragraph 5(b) of the Office Action no longer apply to this claim. Accordingly, the Applicant respectfully requests that the objections set forth in paragraph 5(b) of the Office Action be withdrawn.

With regard to the specification objections set forth in paragraph 5(c) of the Office Action, proper antecedent support can be found in the specification for the subject matter of claims 14, 18 and 24 at amended paragraphs [0041] and [0039], respectively. No new matter has been added. The amendments provide language in the

U.S.S.N. 10/805,712

- 12 -

GKNG 1189 PUS

specification commensurate in scope with the claims, and merely describe what is clearly shown in the Figures.

Having overcome all of the specification objections, the Applicant will now turn to the rejections under 35 U.S.C. §112, second paragraph for indefiniteness. Claim 13, line 23 referring to "axial stopping positions" has been deleted. Also, claim 19 has been clarified in a way which overcomes this rejection.

Claim 19 has been clarified to overcome the objections as noted above, and the allowable subject matter of claim 21 has been incorporated thereto. Claim 21 has been cancelled. Thus, claim 19, as amended, and dependent claim 24 are in a condition for allowance.

Thus, only independent claim 13 remains for discussion relative to the rejections under 35 U.S.C. §103 as claims 14 and 17 have been cancelled and claims 15 and 18 otherwise contain allowable subject matter. Claim 13 has been amended to clarify that the axial stopping positions are symmetrical to a center plane and thus the axial play feature of the claimed joint is provided in both directions relative to the central plane. In contrast, both Miller '600 and Krude '185 disclose axially fixed joints. In Miller, there is direct spherical contact between the inner face of the outer joint member and the cage member, and the outer face of the inner joint member and the cage member such that the joint is axially fixed. (See, Figures 1 and 3.) Similarly, in Krude '185, the joint is axially fixed by deformation of the outer joint member at 16 (Figures 4, 6), at 36 (Figure 8), at 76 (Figure 12), and at 96 (Figure 14). Thus, no possible combination of Miller '600 and Krude '185 could produce a plunging counter track with limited axial play as claimed.

Further, the Jacob '329 reference discloses a counter track joint with an internally cylindrical outer joint part and an internally cylindrical cage. There are no axial stops in Jacob between the outer joint part and the cage outer face, or between the cage inner face and the inner joint part. Nor does Jacob disclose any radial or axial play between the ball cage and the inner and outer joint members. For example, column 2, lines 8-25 of Jacob describe the relationship between the ball cage and the inner and outer joint members. The relationship of the cage to the inner and outer joint members is further

U.S.S.N. 10/805,712

- 13 -

GKNG 1189 PUS

described in column 4, lines 30-33 of Jacob. From the disclosure of Jacob, it is clear that there are no axial stops for the cage with respect to the inner and outer joint members and that the position of the cage with respect to the inner and outer joint members is fixed by the action of the balls within the cage windows.

Accordingly, the Applicant respectfully request that the rejections under 35 U.S.C. §103 be withdrawn as Miller, Krude and Jacob, either alone or in combination, fail to disclose or suggest a counter track joint having axial displacement wherein the axial displacement path is delimited in each direction by a circumferential face in the outer joint part stopping against a spherical outer face of the ball cage.

Having overcome all of the objections and rejections set forth in the Office Action, the Applicant respectfully requests that a Notice of Allowance indicating the allowability of claims 13, 15, 18, 19, and 24 be issued. The Examiner is invited to telephone the Applicants' undersigned attorney at (248) 223-9500 if any unresolved matters remain.

Respectfully Submitted,

ARTZ & ARTZ P.C.



Robert P. Renke, Reg. No. 40,783  
28333 Telegraph Road, Suite 250  
Southfield, MI 48034  
(248) 223-9500

Dated: April 11, 2005